

WHAT IS CLAIMED IS:

1. A map display device, comprising:  
memory means for storing polygon map data;  
drawing processing control means for drawing a polygon map by  
5 reading the polygon map data from the memory means; and  
display means for displaying an output from the drawing processing  
control means, wherein the drawing processing control means is equipped with a  
function for determining a unit of a polygon map that should be drawn and draws a  
polygon map of the determined unit to distinguish between a plurality of unit levels.
- 10 2. The map display device according to claim 1, wherein the drawing  
processing control means reads polygon map data within the predetermined range,  
including the range of display, from the memory means and display patterns of  
adjoining polygon maps which are drawn different from each other.
- 15 3. The map display device according to claim 1, wherein the drawing  
processing control means determines a vehicle present position or a cursor present  
position and only polygon map data, including the detected present position, is read  
from the memory means and drawn.
- 20 4. The map display device according to claim 1, wherein the memory  
means stores therein a plurality of polygon map data comprising a different number of  
coordinates in a one to one correspondence with display scales for a corresponding  
polygon unit and the drawing processing control means reads the polygon map data  
corresponding to the input display scale and draws a polygon map.
- 25 5. The map display device according to claim 4, wherein the number of  
coordinates in the plurality of polygon map data becomes smaller as the area becomes  
larger.
6. The map display device according to claim 1, wherein the memory  
means stores one polygon map data on the basis of each polygon unit and drawing  
processing control means draws a polygon map corresponding with a display scale  
input by reading the polygon map data.
- 30 7. The map display device according to claim 1, further comprising input  
means for inputting a display scale, wherein the drawing processing control means  
determines a unit of a polygon map that should be drawn on the basis of the display  
scale input by the input means and draws a polygon map of the determined unit.

8. The map display device according to claim 7, wherein the drawing processing control means reads polygon map data within the predetermined range, including the range of display, from the memory means and display patterns of adjoining polygon maps which are drawn different from each other.

5 9. The map display device according to claim 7, wherein the drawing processing control means determines a vehicle present position or a cursor present position and only polygon map data, including the detected present position, is read from the memory means and drawn.

10 10. The map display device according to claim 7, wherein the memory means stores therein a plurality of polygon map data comprising a different number of coordinates in a one to one correspondence with display scales for a corresponding polygon unit and the drawing processing control means reads the polygon map data corresponding to the input display scale and draws a polygon map.

15 11. The map display device according to claim 10, wherein the number of coordinates in the plurality of polygon map data becomes smaller as the area becomes larger.

20 12. The map display device according to claim 7, wherein the memory means stores one polygon map data on the basis of each polygon unit and drawing processing control means draws a polygon map corresponding with a display scale input by reading the polygon map data.

13. The map display device according to claim 1, wherein the drawing processing control means draws a polygon map that is included in the range of display and of the largest unit.

25 14. The map display device according to claim 13, wherein the drawing processing control means reads polygon map data within the predetermined range, including the range of display, from the memory means and display patterns of adjoining polygon maps which are drawn different from each other.

30 15. The map display device according to claim 13, wherein the drawing processing control means determines a vehicle present position or a cursor present position and only polygon map data, including the detected present position, is read from the memory means and drawn.

16. A computer readable memory medium, wherein the computer readable memory medium stores therein a polygon map database, and programs for

determining a unit of a polygon map that should be drawn and drawing a polygon map of the determined unit to distinguish between a plurality of unit levels.

17. A method for displaying a map, comprising:

storing polygon map data; and

5 displaying a polygon map by reading the stored polygon map data,  
determining a unit of a polygon map that should be displayed and displaying a  
polygon map of the determined unit to distinguish between a plurality of unit levels.

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